LARGE OFFSET LATTICE FENCE

Field of the Invention

The present invention relates to a unitary polymeric lattice structure.

Background of the Present Invention

A lattice, according to Webster's dictionary, is defined as a framework or structure of wood or metal made by crossing lathes or other thin strips so as to form a network. Such wooden lattices are known to have a 100% offset between a first strip and a second strip that cross and overlay each other. Anyone who has a wooden lattice realizes that they are difficult to repair and maintain. Accordingly, the plastic industry has attempted to re-create these fence designs in a durable form.

Applicant admits there are numerous embodiments of unitary polymeric lattice structures. Many of these embodiments are illustrated in the following list of references:

296935	Erceg	1896957	Hutcheson
2335181	Heath	2384303	Heath
2672658	Pedersen	2712199	Latimer
3307316	Gray	3745735	Casano
3748814	Cribben	3807116	Flynn
3813841	Tsurumi	3849013	Bibb
3927950	Herrmann et al	3981249	Herrmann et al
4016694	Mauell	4060950	Rackard et al
4067162	Dovman	4260124	Heilman
4261940	Bussey, Jr.	4282695	Lew
4323533	Bramhall	4333287	Lewis
4385564	Heggenstaller	4408741	Mimura et al
4409770	Kawaguchi	4448621	Marsh et al

4540308	Colby	4555886	Wiechowski
4723388	Zieg	4760680	Myers
4821481	Woodman	4907289	Pettit
4925512	Briand	5018332	Ying-Kit
5172535	Jongh et al	5174090	Teli et al
5251420	Johnson	5285612	Johnson

None of these cited references, however, disclose, suggest, or teach a unitary polymeric lattice structure having an offset greater than fifty percent and less than one hundred percent. Instead, the cited references disclose polymeric lattice designs that have a unitary non-offset design, a unitary one-strip offset design, a unitary two-strip offset design, or a non-unitary offset design. For the unitary designs, each unitary design has an offset of less than twenty percent (hereinafter "Low Offsets").

Therefore, these Low Offsets have not satisfied a serious long-felt need to have a unitary polymeric lattice structure that has a significant (greater than 50%) offset. Applicant is unaware of any entity presently making such a significant offset lattice structure. Accordingly, applicant has found a mold design that allows applicant to solve this long-felt need.

Brief Description of the Drawings

Figure 1 illustrates a top view of the present invention.

Figure 2 illustrates a cross-sectional view of Figure 1 taken along the lines 2-2.

Figure 3 is a top view of Figure 2.

Figure 4 is an alternative embodiment of the present invention.

Figure 5 is an alternative embodiment of the present invention.

Summary of the Invention

A unitary polymeric lattice fence is the present invention. The lattice fence is a framework of at least one first extension and at least one second extension that appear to cross over each other at different angles so as to form a network of apertures between the extensions. The first and second extensions each have a length, a width, and a depth that are the same or distinct. At the juncture where the first and second extensions appear to cross over each other, at least 50% to 95% of the depth of each extension is exposed and the remaining portion of the depth of each extension is merged with the other extension.

Detailed Description of the Invention

The present invention relates to a polymeric lattice fence illustrated in Figure 1. The polymeric lattice fence 10 is a unitary polymeric structure having a framework of at least one first extension 12 and at least one second extension 14. The first extension 12 and the second extension 14 appear to cross over each other, at a juncture area 16, so as to form a network of apertures 18.

As illustrated in Figure 2, the first extension 12 has a top surface 20, a bottom surface 22 and a width W1 at outer edges 23 of the extension 12; and the second extension 14 has a top surface 24, a bottom surface 26, and a width W2 at outer edges 27 of the extension 14. In relation to the first extension 12, the bottom surface 22 does not extend beyond the halfway point of W2 toward the bottom surface 26. Likewise, the top surface 24 does not extend beyond the halfway point of

W1 toward the top surface 20. That way, the first extension and the second extension has at least a 50% offset.

The fifty percent offset is merely the minimum offset of the present invention while the maximum offset of the present invention is limited to include 95% and below. Otherwise, the present invention would not be an unitary polymeric lattice structure.

Under normal circumstances, it would be assumed that the maximum offset could be anything under 100%. Such a conclusion, however, ignores the fact that the polymeric lattice structure must remain unitary. Accordingly, applicant has discovered that there must be a merger at area 16 wherein at least 5%, preferably 10%, of W1 at the first extension 12 and at least 5%, preferably 10%, of W2 at the second extension 14 must merge together. Otherwise, the plastic lattice structure will not remain unitary, under normal use.

The design illustrated in Figure 1 is not limited to the angle (A) illustrated of the first extension 12 and the second extension 14. The angle A illustrated in Figure 1 is a right angle. Obviously, the angle A can be other angles, such as obtuse or acute, depending on the desired design.

In some instances, the offset should be greater than 80% and in others greater than 90%. In any case, the greater than 50% offset and less than 95% makes the present invention more realistic and simultaneously durable for conventional uses of lattice fencing.

For sake of clarity, the present invention 10 has a plurality of extensions that either parallel the first extension 12 (marked as extension 12A) or the second extension 14 (marked as extension 14A), and multiple cross areas (marked as areas 16B-I) similar to the area

marked 16. Such markings clearly illustrate the various structures of the lattice design 10.

Alternatively, the width W1 can be the same or different as the width W2. Also, area 16 is not mated, glued or joined together by any conventional matter other than when formed.

The lattice unit 10 is formed by injecting melted polymeric resin, i.e., polyethylene, into a mold having the predetermined design of the present invention.

The polymeric resin used in the present invention must be able to withstand the summer heat and the winter cold, without extensive cracking or melting. In other words, the present invention must be able to withstand the conventional climate found at least within the continental United States.

In figure 1 the aperture 18 is illustrated as a square. That aperture design is not the only design. It can be any other design, such as a polygon like a rectangle, a diamond, or a pentagon, or shape having a continuous single curvilinear line like a circle as shown in figure 4, or an ellipse. When a shape having a continuous single curvilinear line is used, there is fill 80. Fill 80 can be the width of the merger W4 of the two extensions 14, 16, the width W1 of the first extension 12, the width W2 of the second extension 14, the width W3 of the first and second extensions 14, 16, greater than the width W5 of both first and second extensions 14, 16, or any size between W4 and W5. It can be any type of design so long as there are the two extensions 14, 16.

The extensions 14, 16 can also be of any design. The design can have an concave surface, planar as shown in figure 2, or convex as shown in figure 5.

Although variations in the embodiment of the present invention may not each realize all the

advantages of the invention, certain features may become more important than others in various applications of the device. The invention, accordingly, should be understood to be limited only by the scope of the appended claims.